

2006 Annual Inspection Report for the Grand Junction, Colorado, Site

Summary

The Grand Junction, Colorado, Site, inspected on February 13, 2006, was in excellent condition. Physical and institutional controls enacted at the site continue to be effective in preventing exposure to contamination remaining on the property. Ground water and surface water monitoring results will be included in a data validation report. No cause for a follow-up inspection was identified.

1.0 Introduction

This report presents the results of the annual U.S. Department of Energy (DOE) inspection of the Grand Junction, Colorado, Site. R. Johnson (Chief Inspector) and M. Widdop (Assistant Inspector), both of S.M. Stoller Corporation, the DOE Office of Legacy Management (LM) contractor at Grand Junction, Colorado, conducted the inspection on February 13, 2006. P. Oliver of the Colorado Department of Public Health and Environment observed the inspection. The inspection was conducted in accordance with the draft *Long-Term Surveillance Plan [LTSP] for the U.S. Department of Energy Grand Junction, Colorado, Office Facility* (MAC-LGJO-1.1, June 2001).

The site was contaminated during uranium milling and uranium oxide procurement activities conducted by the federal government between 1943 and 1974. DOE remediated the property between 1986 and 2001. Remediation consisted of decontaminating or demolishing contaminated buildings and removing contaminated soil. Contaminated materials were disposed of at the Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Grand Junction Disposal Site located south of Grand Junction, Colorado. Some contaminated materials were left in place until they can be remediated efficiently under a state-approved covenant for deferred remediation.

DOE transferred approximately 8 acres of the site in 2001 to the U.S. Department of the Army (occupied by an engineering unit of the U.S. Army Reserve). The remainder of the facility was transferred to nonfederal ownership (Riverview Technology Corporation) in 2001, following approval of the covenant for deferred remediation. Several buildings are leased by DOE from the Riverview Technology Corporation to conduct ongoing DOE operations.

DOE remains responsible for ensuring that contamination left on its former property is controlled to prevent exposure to the public and the environment. Contamination remains in four occurrences:

- In a buried concrete slab and underlying soil beneath the south portion of Building 12.
- In soil and rubble beneath the southwest corner of Building 20.
- In ground water and surface water within the site perimeter.
- As radium foil sealed below ground in a decommissioned calibration borehole.

The site transfer agreement between DOE and the Riverview Technology Corporation stipulates that contamination beneath Building 12 (site computer facility) and Building 20 (analytical chemistry laboratory) will be remediated when DOE vacates those buildings and they are demolished. DOE plans to relocate the computer facility, demolish the south portion of Building 12 (known as Building 12A), and remediate the underlying contaminated concrete slab and soil in 2006. DOE concluded operations in the laboratory in December 2003, and demolition of the building and remediation of underlying contaminated materials is also scheduled for 2006. The ground water and surface water is being passively remediated by the process of natural flushing of the alluvial aquifer. DOE will provide stewardship oversight of the decommissioned calibration borehole in perpetuity.

Controls to maintain protectiveness from hazards created by the contaminated materials include warning signs, physical access barriers, deed restrictions, periodic inspections, and records maintenance. The purposes of the annual inspection are to confirm the integrity of visible features at the site, to identify changes in conditions that may affect site protectiveness, and to determine the need, if any, for maintenance, additional inspections, or monitoring.

2.0 Inspection Results

The annual inspection addresses only those portions of the site that must be monitored and maintained to ensure continued protection of human health and the environment. Those portions are related to contaminated media that remain at the site. Features discussed in this report are shown on the attached drawing. Photographs to support specific observations are identified in the text and on the drawing by photograph location (PL) numbers.

2.1 Specific Site Surveillance Features

Monuments—Two monuments exist at or adjacent to the site. A 1/16-section corner monument east of the site is located adjacent to the site access road (B $\frac{3}{4}$ Road). This monument was the origin for the site survey coordinate system during remediation. A U.S. Coast and Geodetic Survey monument near the former north gate to the site establishes elevation control for the site. Both monuments were in excellent condition.

Monitor Wells—DOE owns eight monitor wells on the property to monitor the progress of natural flushing of contaminants from the alluvial aquifer. The wells are sampled annually. Inspectors found the visible portions of all wells in good condition, and all wells were secure. Identification numbers were stamped on the lids of all of the flush-mounted wells since the last inspection (PL-1). Signs for flush-mounted wells 10-19N and GJ84-04 had been removed prior to the inspection because they were damaged and no longer needed for identification.

Warning Signs—Thirteen warning signs installed on galvanized steel posts are positioned around the surface water areas so the warning will be visible to a person approaching from any direction of reasonable access. Dense vegetation or fences block access to portions of the surface water occurrences. All signs were in excellent condition. Metal caps were installed on the signposts since the last inspection to inhibit rusting and prevent freeze damage (PL-2).

Radium Foil Borehole—DOE installed a 300-foot-deep cased borehole in the 1980s to calibrate depth measurement systems on borehole geophysical logging trucks. Two strips of radium-226 foil were placed around the casing at depths of 81 feet (29 picocuries per gram) and 181 feet (3 picocuries per gram). During calibration, the instruments in the trucks would detect the gamma signal from the radium.

The borehole was decommissioned in place in 2000. DOE perforated the casing above and below each strip of foil and pressure-grouted the annulus with Portland cement to seal the foil in place. The borehole was filled with grout, and a metal plaque was mounted in concrete at ground level over the well. Borehole information printed on the metal plaque was fading and difficult to read at the time of the last inspection. A new metal plaque with the borehole information and warning engraved into the metal has been installed (PL-3).

2.2 Transects

To ensure a thorough and efficient inspection, the site was divided into two areas referred to as transects: (1) the area within the former DOE property boundary that is addressed in the LTSP; and (2) the outlying area.

Within each transect, inspectors examined specific site surveillance features, such as survey markers, warning signs, and monitor wells. Inspectors examined each transect for evidence of erosion, excavation, vandalism, or other phenomenon that might indicate a loss of institutional control or diminished protectiveness.

Interior Portions of the Site—This transect includes the portions of Buildings 12 and 20 where contamination remains beneath the buildings, the surface water areas, and other site surveillance features within the former DOE property boundary.

The interior floor area of Building 12A was inspected. There was no visual evidence of floor penetrations in the affected area since the last inspection, which was confirmed by the building manager. The interior of Building 20 was not inspected because it was undergoing asbestos abatement in preparation for building demolition. Exterior areas adjacent to the contaminated media under both buildings have not been disturbed (PL-4 and PL-5). The current site owner controls maintenance activities in the exterior areas near the contaminated soil and DOE contractor personnel observe these exterior areas during normal working activities.

The North Pond, South Pond, and wetland areas are surrounded by a fence, which limits casual intrusion. There was no evidence of fishing, trespass, vandalism, or use of the water.

Most of the site surveillance features are in areas not easily accessible by the public due to fencing. There were no signs of activity, development, or land use change (e.g., well installations or excavations that could expose ground water) on the site that might degrade protectiveness.

Outlying Area—There were no signs of activity, development, or land use change in areas adjacent to the site that might expose contaminated ground water or impact the natural flushing of the aquifer.

3.0 Ground Water and Surface Water Monitoring

In accordance with the Record of Decision for the site, the contaminated ground water is being remediated through natural flushing of the alluvial aquifer. This passive remediation is expected to be completed in 50 to 80 years following completion of remediation of contaminated soils (except for the contamination remaining under Buildings 12 and 20, site remediation was completed in 2001). Sampling of the ground water at the site wells and of the surface water at locations at North Pond, South Pond, the wetlands area, and the Gunnison River occur on an annual basis. Monitoring results will be included in an annual data validation report.

4.0 Recommendations

No maintenance items were identified during the inspection.

5.0 Photographs

Photograph Location Number	Azimuth	Photograph Description
PL-1	NA	Stamped identification number on the cover of monitor well 14–13NA.
PL-2	60	Warning sign S2 located on the west side of South Pond.
PL-3	NA	Information/warning plaque on the sealed borehole containing radium foil.
PL-4	290	Area along the southeast corner of Building 12 adjacent to the location of the contaminated concrete slab under the building.
PL-5	50	West end of Building 20 adjacent to the location of contaminated materials under the building.

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GJO 2/2006. PL-1. Stamped identification number on the cover of monitor well 14-13NA.



GJO 2/2006. PL-2. Warning sign S2 located on the west side of South Pond.



GJO 2/2006. PL-3. Information/warning plaque on the sealed borehole containing radium foil.



GJO 2/2006. PL-4. Area along the southeast corner of Building 12 adjacent to the location of the contaminated concrete slab under the building.



GJO 2/2006. PL-5. West end of Building 20 adjacent to the location of contaminated materials under the building.

